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THE MONIST

PLATO'S CONCEPTION OF THE COSMOS.

I.

“**P**YTHAGORAS was the first,” says Plutarch, “who named the compass of the whole a Cosmos, because of the order which is in it.”

The notion that all things knowable and all things existent form one orderly and comprehensive system, in which every event is linked with every other by causal necessity while all the elements with mechanical nicety mutually enmesh, is to us of to-day an intellectual commonplace. We make no difficulty in thinking an Everything which is made up of all things, an Entirety or a Totality which is just the commingled sum of the numberless particularities which our lives are always itemizing; and we call this Totality, this All, this Thing of things, the Universe or the World. It rarely occurs to us to question either the unity or the reality of this omnium-gatherum, which, even if it occupies a somewhat concealed position in our thoughts, is yet a well-nigh indispensable convenience; it stands an ever-ready and capacious receptacle for all the perplexities and inconsistencies which the apparent nature of things is constantly presenting, but which, we feel, are in some benign way healed by the alchemical mystery of an all-inclusive World.

Ideas are habits; and when an idea gets so fixed that the habit has become automatic, it is usually good medicine

to revive, now and again the habit-forming period, that we may judge with refreshed intelligence the safety and truth of our continued course. This is our purpose in turning to certain Greek conceptions of the world as a cosmos.

For we must remember that the notion, so familiar to us, of what they variously called τὸ πᾶν, the All, or τὸ ὅλον, the Whole, or again ὁ οὐρανός, the Heaven, or ὁ κόσμος, the Order of Things, was to the Greeks a new invention. The idea that all things are somehow one is by no means self-evident, and when it was suggested the wary Hellenic mind approached it with canny suspicion and cautious circumlocution. Is the World limited or unlimited? Is it truly One or is it Many? Does the Whole, or Totality, exhaust the All? Or indeed may not the All indefinitely transcend the Realm of Order, the Cosmos? These were questions which were raised and discussed—questions with a dangerous smack of impiety—by the men who were interested in what Xenophon characterizes as “that which is called by sophists ‘the world.’”

Doubtless it was Pythagoras, as Plutarch states, or some Pythagorean, who first daringly pronounced the Whole to be a Cosmos, the realm of reality and the realm of order to be coextensive. For the Pythagoreans were the earliest of men to be entirely enamored of that first principle and foundation of law and order, the idea of number. They devoted themselves to mathematics and music and astronomy, and in the numerical analogies which they discovered in the properties of sound and in the movements of the heavenly bodies there burst upon their minds, with what must have seemed a very blaze of creative intelligence, the great conception of number in nature, which has since been the foundation of all our science. They conceived all nature to be organized according to mathematical proportions, and because they found these proportions to be most emblematically realized in musical strings

and pipes they named the principle of it a harmony, and again because they seemed to see it regnantly imaged in the motions of the heavenly spheres they regarded these too as a harmony and a music. It was indeed primarily to the heavens that the name Cosmos was given, and it was only later, when the seasons of Earth were observed to follow the periods of the Sun while the figures of the stars were regarded as prognostics of human events, that the conception of order was extended from celestial to terrestrial phenomena.

The background of Hellenic thought, like the natural thought of mankind everywhere, was pluralistic. To the normal Greek, even in the days of Plato and Aristotle, the obvious facts of life indicated not a consistent and close-locked universal scheme, but a *mêlée* of whim and purpose, blind chance and blinder fancy, while the most reasonless of all the powers he recognized was that to which he gave the name Necessity. To him it seemed evident that the affairs of men and nature are innumerable and unorganized, and while certain of the more stable aspects of existence were regarded as the charge of the Olympian gods, not even such mercurial control as emanated from the hoydenish family of Zeus divine obtained in the generality of experience: the vast majority of events were not to be explained at all; they were simply the manifestation of the hostility, indifference, idiosyncrasy and anarchy which appear in the elemental facts of life.

This, I say, was the view of the normal Greek even in his classical hey-dey, as it is the view of the naive and natural man everywhere. But the foundations of our own sophisticated philosophy had been set long before, in two first conditions which, as I see it, go far to account for the whole edifice of reason.

One of these is a psychological condition. It is what is known in Kantian philosophy as the "unity of apper-

ception" and in scientific method as the "law of parcimony," or economy of thought. Essentially it is just our native simple-mindedness, expressed in the maxim, "Attend to one thing at a time." Intellectually we are unable to cope with complex facts; we have to simplify them, analyze them, in order to see them. Hence we regard simplicity as the supreme virtue, not only in reason but also in nature; and hence also our invincible conviction that reason's simplifications are more genuine than nature's empirical complexities. In spite of its multitudinous and multiplying variety the very limitations of our intellectual powers compel us to see Nature as one, as a unity, and thus out of chaos is created an orderly world.

Such is the inner condition, but it is mightily helped outwardly by the natural allegory of Sky and Earth, Day and Night, Summer and Winter. These antitheticals seem to form a great division of Nature into the Intelligible and the Unintelligible: Sky and Day and Summer not only symbolize but embody motion and light and life, which are in turn the image and essence of reason; while Earth and Night and Winter no less surely body forth the inert and void and deathly realm of anti-reason. Thus we have a realm of order, Cosmos, set over against a realm of disorder, a Chaos; and because the orderly Sky images the rulership of reason, and because Day is the revealer and Summer the life-giver, these powers are regarded as friendly to man and in the great contention of Nature as encroaching upon and subduing the dark forces of Chaos.

Such a sense of duality is omnipresent in human thought. Its metaphors are the very breath of life of poetry, and even in philosophies which deny its reality the problems to which it gives rise—problems of the formal and material, spiritual and physical, good and evil,—are the crucial perplexities. Greek thought is no exception to the rule. Already in the epic theogonies Uranus and Gaea,

Sky and Earth, appear as ancestral and gigantic forms of creation emerging from primeval chaos. . . .

"First Chaos was, and then broad-bosomed Earth. . . .
And Earth bare starry Heaven, thence to be
The habitation of the blessed gods."

This is the Hesiodic genesis, and the Orphic differs from it only in making Heaven and Earth a coequal and wedded pair, from whose union multitudinous nature was begotten. Euripides preserves it in the utterance of the seeress Melanippe:

"It is not my word, but my mother's word,
How Heaven and Earth were once one form; but stirred,
And strove, and dwelt asunder far away:
And then, re-wedding, bore unto the day
And light of life all things that are, the trees,
Flowers, birds and beasts and them that breathe the seas,
And mortal man, each in his kind and law."¹

This dualism of the epic age passed over into the philosophic tradition with little more than a change of names. In place of Heaven and Earth, the antithesis is set between Chaos and Nous, Anarchy and Intelligence, or between Chaos and Cosmos, Void and Order,—though we must remember that the word οὐρανός persisted as a synonym of κόσμος even with Plato and Aristotle, and that κόσμος itself was at first used of the heavenly firmament, and only with advancing insight into the orderliness of the world beneath the spheres was it made to include terrene nature.

The lesson of intelligence was in fact learned first of all from observation of the heavens. No phenomena so vividly impress the natural mind with a sense of their divinity as do the regular and brilliant courses of the heavenly bodies. Repetition is the gateway and light is the outer image of learning, and in the sun and moon and stars we have our permanent exemplars of repetition and light.

"All mankind thou guidest as a single being;
Expectantly, with raised head, they look up to thee!"

¹ Gilbert Murray's translation.

says a Babylonian hymn to the sun, for which the nineteenth psalm—

"The Heavens declare the glory of God,
And the firmament sheweth his handywork"—

is only a later parallel. Plato, in describing the works of the Demiurge, tells how "of the heavenly and divine, he created the greater part out of fire, that they might be the brightest of all things and fairest to behold, and he fashioned them after the likeness of the universe in the figure of a circle, and made them follow the intelligent motion of the supreme, distributing them over the whole circumference of heaven, which was to be a true cosmos or glorious world spangled with them all over."² And in another passage Plato derives from the image of the heavens, as does the psalmist, his conviction of the goodness of God: for if, he says, "we say that the whole path and movement of heaven, and of all that is therein, is by nature akin to the movement and revolution and calculation of mind, and proceeds by kindred laws, then, as is plain, we must say that the best soul takes care of the world and guides it along the good path." Perhaps the sublimest expression of this thought in Greek literature is Aristotle's characterization of Xenophanes: "He cast his eyes upon the expanse of Heaven, and saw that it was one, and that one God."

Thus the heavens were at once the embodiment of reason and divinity, the symbol of divine rulership and the exemplar of divine perfection. But it was the reverse of obvious that either the mathematical regularity of the heavenly reason or the perfection of heavenly form extend to the world beneath the moon. What seems to have been really the first suggestion that such is the case was the Pythagorean discovery that musical intervals vary with the length of the sound-producing strings according to certain simple and regular numerical ratios. This discov-

² This and other citations from Plato are in Jowett's translation.

ery burst upon men's minds as a sudden revelation of order where order had hitherto never been suspected, and in their first delirious application of it the Pythagoreans seemed to see number everywhere, in the world of change below as in the world of constancy above, in the conduct of men as in the conduct of gods and stars, and so they proclaimed the Whole to be a One, whose emanating numbers gave coherence and system to all things, and they named this systemic All a Cosmos.

There remained one further step. Xenophanes had seen God in the heavens; Pythagoras had lifted Earth up into the Cosmos; but neither had as yet perceived that the world of sense and of physical numbers is only a symbol and an image of the true realm of law, that the cosmic citadel must be sought inwardly in thought and not outwardly in fact. This had been darkly intimated by the dark Heraclitus. "Better is the hidden harmony than the manifest," he had said; and again, "In one thing is wisdom, to know the reason by which all through all is guided." But it was Socrates who first clearly and explicitly emphasized the inner nature of the cosmic principle. "Socrates was the first," says Cicero, "to call philosophy down from the sky, and to settle it in the city and even introduce it within the house, and compel it to inquire concerning life and death and things good and ill." Probably, in saying this, Cicero, like Xenophon, merely saw Socrates turning from astronomy as from a vain speculation. The truth of Socrates' mission is perhaps better indicated by Aristotle's statement that it was Socrates who invented definition. We know what he strove to define—courage and temperance and justice and wisdom, the principles of conduct and the laws of an orderly life. Socrates was seeking cosmos, reason, not in the physical image, but in the spiritual reality. That Socrates was genuinely interested in physical science there is every reason to believe,

but his final attitude is best expressed in the words which Plato puts into his mouth, "Those who elevate astronomy into philosophy appear to me to make us look downward and not upward."

The predecessors of Plato had modelled two great conceptions. The physical and mathematical thinkers had evolved the grandiose notion of a Cosmos, an Order, written upon the face of Chaos. Heraclitus and, far more distinctly, Socrates had proclaimed this order of nature to be only the outward image and reflection of the inner order of reason. Pythagoras and Heraclitus and Socrates, more than all others, were the teachers of Plato, and it was from the inspirations of their insights that he drew his own magnificent vision of the world.

II.

The vivid impression one derives from a reading of Plato is of the intensity of his conviction of the unreality of sensible things. The world of sense, of sight and hearing and taste and touch, in which most men chiefly dwell is for him a shadow world. At its best it is but a symbol obscurely imitating the character of the reality which it veils; in its normal function it is a delusional mirage; and at its worst, when it conveys the deception of knowledge, it is the fount of corruption and the seed of damnation. The Greek argument against our commonsense conviction that what we see and touch is real is about as follows: All objects of sense suffer perpetual change; they never *are* this or that, but are always in a process of becoming or of ceasing to be this or that; hence, we cannot justly describe them as being anything, or indeed as having any true existence of any sort. Heraclitus remarked that one cannot bathe in the same river twice, and Cratylus, the sceptic, after remarking that we cannot in fact bathe in the same river even once, finally, as Aristotle tells us,

ceased speech altogether on the ground that it was impossible to say any thing that is true; to inquisitors he would reply merely by a wagging of the finger, his mutely eloquent asseveration of his master's dogma that "All things flow." Plato accepted this doctrine, as he also accepted Socrates's conception that ignorance is essential vice, and combining the two, to the sceptical he added a moral condemnation of the world of sense: not only does it not give us truth, but because, as he says, "ignorance is the aberration of a mind bent on truth," through the intensity of its illusions it betrays the soul's integrity.

The Cratylean denial of the possibility of discourse is thus, for Plato, the proclamation of moral ruin, and at such his sanity revolts. Nor is the way of salvation hard to find. If sense be false, ideas may yet be true, and in its own proper world discourse may be dealing with reality. "Knowledge"—these are Plato's words—"does not consist in impressions of sense, but in reasoning about them; in that only, and not in the mere impression, truth and being can be obtained." And again: "Things of which there is no rational account are not knowable. . . . things which have a reason or explanation are knowable." Plato's "world of Ideas," as it is called, is in fact but the assertion that our speech is significant, and that this significance, not the courses of sense, is what we mean by reality. "The word expresses more than the fact" and "in the nature of things the actual must always fall short of the truth."

Plato's idealism is thus simply a sane and unconquerable conviction that there is a realm of truth, and his whole philosophy is an effort to find out this truth. In the *Phaedrus* he speaks of truth as "the pilot of the soul"; in the *Philebus* he asserts that the soul has "a power or faculty of loving truth and of doing all things for the sake of it"; and in the *Phaedo* he makes Socrates, about to take the hemlock, preface his great argument for the soul's immor-

tality with a wise caution against the bias of desire, "I would ask you to be thinking of the truth and not of Socrates."

Yet Plato has no illusory notion that truth is of easy access. Immersed as we are in a sea of distorting sensation, our knowledge at its best is only a faith. "For there is no light of justice or temperance or any of the higher ideas which are precious to souls in the earthly copies of them: they are seen through a glass darkly." In the famous image of the den, wherein mankind are the chained prisoners, with their eyes fixed upon the shadows of reality, Plato reminds us that even were our eyes opened to the upper world the light of reality would sear our vision. All that we can hope for is such intimations of the truth as we can gather from the allegory of nature.

And with a curious astuteness he emphasizes the affinity of vision—"the clearest aperture of sense"—to the inner perception of truth. "Sight in my opinion," says Timaeus, "is the source of the greatest benefit to us, for had we never seen the stars and the sun and the heavens, none of the words which we have spoken about the universe would ever have been uttered. But now the sight of day and night, and the months and the revolutions of the years, have created number, and have given us a conception of time, and the power of inquiring about the nature of the universe; and from this source we have derived philosophy, than which no greater good ever was or will be given by the gods to mortal men. . . . God invented and gave us sight to the end that we might behold the courses of intelligence in the heavens, and apply them to the courses of our own intelligence which are akin to them, the unperturbed to the perturbed; and that we, learning them and partaking of the natural truth of reason, might imitate the absolutely unerring courses of God and regulate our own vagaries."

In this remarkable passage Plato compresses not only

the actual history of science, but its psychological foundations and its metaphysical ends, with a precision truly astonishing. I cannot dwell upon the multitude of analogies that it suggests, but the fundamentals are obvious; for the sense of sight is in fact the pattern of intelligence; perception of the heavens has given us our measures of time, and has created number and the science of the calendar which is the parent of all the sciences and of philosophy as well; and again the constancies of the celestial bodies have ever seemed to men, as Plato says, the regulation and the healing of their own errant ways. The whole life of reason is summarized and prophesied in this natural allegory.

And yet, let us repeat, it remains for Plato throughout an allegory. All science is an allegory and an art. What men call nature, the experiences that in human life stand over against our essential humanity, is after all unreal. It may image reality because it is the product of creative reason, but beyond this power of imaging its only being is scenic and mirage-like.

"The starry heaven which we behold is wrought upon a visible ground, and therefore, although the fairest and most perfect of visible things must necessarily be deemed inferior far to the true motions of absolute swiftness and absolute slowness, which are relative to each other, and carry with them that which is contained in them, in the true number and in every figure. Now, these are to be apprehended by reason and intelligence, but not by sight. . . . The spangled heavens should be used as a pattern and with a view to that higher knowledge; their beauty is like the beauty of figures or pictures excellently wrought by the hand of Daedalus, or some other great artist, which we may chance to behold; any geometrician who saw them would appreciate the exquisiteness of their workmanship, but he would never dream of thinking that in them he

could find the true equal or the true double, or the truth of any other proportion. . . . And will not the true astronomer have the same feeling when he looks at the movements of the stars? Will he not think that heaven and the things in heaven are framed by the Creator of them in the most perfect manner? But he will never imagine that the proportions of night and day, or of both to the month, or of the month to the year, or of the stars to these and to one another, and any other things that are material and visible can also be eternal and subject to no deviation—that would be absurd.”

Where the ancients said “astronomy” we say “physics,” remarks a savant of our own day; and is it not obvious that Plato’s words hold with perfect truth of our own science? For we, like Plato, do not look to the visible and sensible world for our realities, but to an ideal world which is only faintly intimated by the riddle of the senses. Whether it be as in our mechanical sciences a world of atoms and molecules or of ether vortices or of electrons and ions, or as in our biological sciences a world of genera and species, in every case we hypothecate a realm of forms, of ideas, as the essential reality of all natural phenomena. We vary no whit from Plato in all this; and indeed, little as they may suspect it, all our scientists are good Platonians.

But where we do vary from Plato is in the kind of value which we set upon our ideas. For we regard our scientific knowledge as ultimate and as a kind of divine possession in itself, whereas Plato held it to be only a means whereby men can dimly approach the being of divinity. In his own phrase we are “thrice removed from the king and the truth”: behind the world of sense is the world of mathematical forms which are in turn but the reflection of the divine intelligence. Sense is the allegory of science, but science itself is only our human parable of divinity—a myth whose meaning is the mind of God. Science is thus

a purely human instrument, and truth, our human, intellectual truth, is but the device whereby we adumbrate the nature of being. "The Deity," says Plutarch in one of his expositions of Plato, "stands in no need of science, as an instrument to withdraw his intellect from things engendered and to turn it to the realities; for these are all in him, and with him, and about him." It is only the weakness of human insight that makes the world-myth a significant myth.

III.

Plato, his critics are accustomed to say, resorts to allegory, to what he himself calls myth, when he encounters problems with which rational analysis alone is unable to cope. The lordly tales which adorn his dialogues these critics view as imaginative ornaments which Plato himself takes only half seriously. This I believe to be a misunderstanding. It is characteristic of these myths that they are introduced not when Plato is analyzing the nature of being, but when he has passed to a discussion of becoming, that is, when cosmic history rather than metaphysical organization is his theme. Now it is this province of becoming, which we should call the field of empirical science, which is, in Plato's view, itself an allegorical reality. And in resorting to allegory for its description he is but emphasizing the duplex nature of the fact. There is no field of discourse where positive statement is so easy and so dangerous as in the field of science (in our modern sense), and in discussing the problems of change Plato employs myths primarily in order that he may avoid dogmatism. Empirical science is for him a work of human art, just as the empirical universe is God's work of art; and he would not have us forget, what we are so prone to forget, that our constructions of cosmic realities give us at best but a verisimilitude, or as he would say, an "imitation" of the truth. In speak-

ing of the empiric world, he repeats again and again, we can use but the "language of probability," and the language of probability is myth.

When therefore Plato, in the language of probability or of myth, sketches for us the cosmic drama which is the history of the world, it is with no Laplacean confidence in the invulnerability of his representation. Rather he is aware that at the core it cannot be the essential truth of the cosmos: science is given us in order that we may "imitate," as he says, "the absolutely unerring courses of God and regulate our own vagaries": it is not and cannot give dogmatic knowledge. "Law and order," to quote once more, "deliver the soul"; and there is a trenchant difference between this and our modern conception that the soul is but an automatic reflection of external laws and orders.

The motive which animates Plato's cosmological speculations is thus clearly a humanistic motive. He is concerned for truth, but only for such truth as bears directly upon men's conduct, and this he does not expect to find in the sensible world. For him, as for Dante, the world in time and space is but the vesture of man's life, whose essence and reality is to be sought in that divine nature of which apparent nature is the image. Truth, then, must be appraised, and the appraiser is the Good and the Perfect,—for "nothing imperfect is the measure of anything."

The conception of a cosmic drama—a world-play having, as Aristotle would say, a beginning, a middle and an end, a complication and a solution,—is not new with Plato. It appears in the theogonic epics and in the notions of the physical philosophers of the earlier period. But it is with Plato that the proper motive of the plot appears; and this is the striving for the good. With Plato's predecessors the moral problem had been (as it is to our scientists) adventitious; with Plato it is central, and we can understand his science of first and last things only when we see in it,

as he saw in nature, a cosmic staging of the search for salvation.

Genesis and eschatology represent respectively the complication and solution of the plot. Genesis, the tale of origins, is treated most completely in the *Timaeus*; cosmic justice and its judgments is the theme of the speculative cosmology of Socrates in the *Phaedo* and of the vision of Er in the *Republic*. In these and in allied passages Plato draws for us his world emblem.

Plato begins his genesis, in the *Timaeus*, with an assertion of dualism. "First," says Timaeus, "we must make a distinction and ask, What is that which always is and has no becoming; and what is that which is always becoming and never is? That which is apprehended by intelligence and reason is always in the same state; but that which is conceived by opinion with the help of sensation and without reason, is always in a process of becoming and perishing and never really is." In its inception this dualism is a logical one, hypostatized into the familiar Platonic antithesis of the World of Sense and the World of Ideas. But very speedily we perceive that the moral antithesis of good and evil is in it also. The kernel of Plato's thought is the old philosophical dualism of *Nous* and *Chaos*, and even the older mythic dualism of *Heaven* and *Earth*; and, as does the earlier thought, he identifies *Mind* and *Light* with *Goodness*, and *Disorder* and *Darkness* with *Evil*.

"God desired that all things should be good and nothing bad, so far as this was attainable. Wherefore also finding the whole visible sphere not at rest, but moving in an irregular and disorderly fashion, out of disorder he brought order, considering that this was in every way better than the other. Now the deeds of the best could never be or have been other than the fairest; and the creator, reflecting on the things which are by nature visible, found that no

unintelligent creature taken as a whole was fairer than the intelligent taken as a whole; and that intelligence could not be present in anything which was devoid of soul. For which reason, when he was framing the universe, he put intelligence in soul, and soul in body, that he might be the creator of a work which was by nature fairest and best. Wherefore, using the language of probability, we may say that the world became a living creature truly endowed with soul and intelligence by the providence of God."

In these words of Timaeus, Plato outlines his conception of creation. God, perceiving the disorder of Chaos, designs to redeem it by imparting to it the image of mind, of Cosmos, order. He creates it, therefore, in the likeness of a perfect animal (*παντελής ζῷον*), "the very image of that whole of which all other animals both individually and in their tribes are portions." First he created its soul, the *anima mundi*, "to be the ruler and mistress, of whom the body was to be the subject," organized from the categories of thought, from identity and difference and essence, in harmony of number. Afterwards he gave it body, interfusing with the visible body the rational soul, so that the whole universe of being became one animal endowed with soul (*ζῷον ἔμψυχον*).

"And he gave to the world the figure which was suitable and also natural. Now to the animal which was to comprehend all animals, that figure was suitable which comprehends within itself all other figures. Wherefore he made the world in the form of a globe, round as from a lathe, having its extremes in every direction equidistant from the center, the most perfect and the most like itself of all figures; for he considered that the like is infinitely fairer than the unlike. This he finished off, making the surface smooth all round for many reasons; in the first place because the living being had no need of eyes when there was nothing remaining outside of him to be seen; nor of ears

when there was nothing to be heard; and there was no surrounding atmosphere to be breathed; nor would there have been any use of organs by the help of which he might receive his food or get rid of what he had already digested, since there was nothing that went from him or came into him: for there was nothing beside him. . . . And, as he had no need to take anything or defend himself against any one, the Creator did not think it necessary to bestow upon him hands: nor had he any need of feet nor of the whole apparatus of walking; but the movement suited to his spherical form was assigned to him, . . . and he made the universe a circle moving within a circle, one and solitary, yet by reason of its excellence able to converse with itself, and needing no other friendship or acquaintance. Having these purposes in view he created the world a blessed god."

"When the father and creator saw the creature which he had made moving and living, the created image of the eternal gods, he rejoiced, and in his joy determined to make the copy still more like the original; and as this was eternal, he sought to make the universe eternal, so far as might be. Now the nature of the ideal being was everlasting, but to bestow this attribute in its fullness upon a creature was impossible. Wherefore he resolved to have a moving image of eternity, and when he set in order the heaven, he made this image eternal but moving according to number, while eternity itself rests in unity; and this image we call time." Time came into being with the heavens which measure it, and will be dissolved with them, says Plato; but space is of another origin. For besides the reason which gives cosmic form there is another cause of being, a principle of limitation which Plato calls necessity. We must conceive, he says, of three natures: first, that which is in process of generation, and this would be the world of nature as we experience it; second, that in which the generation takes place, and this is the recipient or

matrix of nature; and third, that of which the generated world is an image, and this is the cosmic reason or form. "We may liken the receiving principle to a mother, and the source or spring to a father, and the intermediate nature to a child," he says, and we think immediately of the mythopoetic union of Earth and Heaven and of the Life of Nature which is its offspring. But for Plato this is a mere trope; he does not rest without being scientifically explicit. There are three kinds of being: that which is uncreated and indestructible, changeless, eternal, imperceptible to any sense, open only to the contemplation of the intelligence, and this is the principle of the Father, the ideal or formal essence of the world; again, that which is sensible and created and always in motion, the Child, the world of change and life; and finally, there is a third nature, the Mother, which, like the Father, is eternal and admits not of destruction, which provides a home for all created things, and is apprehended "without the help of sense, by a kind of spurious reason, and is indeed hardly real." This nature is space, and we "beholding as in a dream, say of all existence that it must of necessity be in some place and occupy a space, but that what is neither in heaven nor in earth has no existence."

This mothering space which is hardly real, yet is the cause of the determinism of nature, Plato identifies as the material element of being. As pure matter it is purely indeterminate, but it is receptive of all determinations. The four elements, earth, air, fire and water, are formed from it, for "the mother substance becomes earth and air, in so far as she receives the impressions of them." Plato's conception of the formation of these elements from the original substance was as purely mathematical as are our modern physical notions. "God fashioned them by form and number," he says; and the forms which he assigned were the forms of the regular solids. Thus the form of the fiery

element is the pyramid, of air the octahedron, of water the icosahedron, of earth the cube. The fifth solid, the dodecahedron is the form of the universe as a whole, or perhaps one might say the scaffold upon which the spherical universe is constructed. Further, these elements are themselves compounded of simpler mathematical forms, the pyramid, octahedron and icosahedron of scalene, the cube of equilateral triangles; so that if we regard the elements as molecules, we may view the triangles as atoms of the material substrate.

Doubtless it was this geometrical account of matter which gave rise to the saying ascribed to Plato that "God always geometrizes,"—for God, says Plutarch in his commentary on the saying, made the world in no other way than by setting terms to infinite and chaotic matter. But it is not with the mathematical aspect of Plato's theory that we are here most concerned, but with its moral bearings. For it is in matter that Plato finds the root of evil, and, if we may so put it, the villainy of the world. In framing the inhabitants of the world, according to the account of Timaeus, the Creator made first the race of gods, perfect and immortal; but of the race of men he made only the souls, their bodies were handed over to the created gods to be composed of perishable matter. "The part of them worthy of the name immortal, which is called divine and is the guiding principle of those who are willing to follow justice and you (the gods)—of that divine part I will myself," saith the Creator, "sow the seed, and having made a beginning, I will hand the work over to you. And do ye then interweave the mortal with the immortal, and make and beget living creatures, and give them food, and make them to grow, and receive them again in death."

And having made souls equal in number to the stars, and having assigned each soul to a star, and there placed

them as in a chariot, God "showed them the nature of the universe, and declared to them the laws of destiny, according to which their first birth would be one and the same for all,—no one should suffer a disadvantage at his hands,"—and he showed them how "he who lived well during his appointed time was to return and dwell in his native star, and there would have a blessed and congenial existence; but if he failed in attaining this," he would be reborn into some brute who resembled him in evil nature, nor would his toils and transformations cease until the principle of reason had enabled him to overcome "the turbulent and irrational mob of later accretions, made up of fire and air and water and earth" and return to his first and purer state. And "having given all these laws to his creatures, that he might be guiltless of future evil in any of them, the Creator sowed some of them in the earth, and some in the moon, and some in the other instruments of time; and when he had sown them he committed to the younger gods the fashioning of their mortal bodies, and desired them to furnish what was still lacking to the human soul, and to rule over them, and to pilot the mortal animal in the best and wisest manner which they could, and avert from him all but self-inflicted evils."

In these passages we see the *rationale* of the Platonic doctrines of anamnesis and metempsychosis, or recollection and transmigration. The great image in the *Phaedrus* of the soul in its chariot driving the unruly and the ruly steed, and the descriptions of a future-world judgment in the *Phaedo* and *Republic*, in which these doctrines are presented, appear as necessary scenes in the cosmic drama. The motive of that drama is the conflict of form and matter, *Nous* and *Chaos*, which on its theological side is the conflict of God and Necessity as the two principles of being, and in its moral aspect is the strife of Good and Evil. In each of these senses Plato is a dualist; and if he describes chaos

and matter and evil in negative terms, this is not because he views them as non-existent (as our modern idealists seem to do), but because he regards them as impermanent, and hence as unreal; for Plato defines the real as the permanent, never, however, meaning thereby to deny genuineness of our experience of change and hence of imperfection and evil.

Nevertheless, Good and Evil, God and the Devil, are not in Plato's conception coordinate powers. Their difference is a difference of dramatic position. In the world-conflict we, as human beings, are all enlisted on the side of the good, and if we are traitorous to it this is because of the deceit of the enemy. "For as we acknowledge the world to be full of many goods and also of evils, and of more evils than goods, there is, as we affirm, an immortal conflict going on among us, which requires marvelous watchfulness, and in that conflict the gods and demigods are our allies and we are their property." No Persian has ever stated this fundamental dualism more emphatically nor adhered to it more uncompromisingly. From it Plato deduces the ascetic rule of life which recurs in his writings so repeatedly. "Evils," says Socrates in the *Theaetetus*, "can never pass away; for there must always remain something which is antagonistic to good. Having no place among the gods in heaven, of necessity they hover around the mortal nature and this earthly sphere. Wherefore we ought to fly away from earth to heaven as quickly as we can." And from it, too, comes Plato's clear-eyed perception that the idea of good holds the hegemony over all our interests, scientific and esthetic as well as moral. It is the good—as our pragmatists say—which makes truth true and is indeed the measure of reality. For "that which imparts truth to the known and the power of knowing to the knower is what I would have you term the idea of good, and this you will deem to be the cause of science, and of

truth in so far as the latter becomes the subject of knowledge; beautiful too, as are both truth and knowledge, you will be right in esteeming this other nature as more beautiful than either; and as light and sight may be truly said to be like the sun and yet not to be the sun, so in this other sphere, science and truth may be deemed to be like the good, but not the good; the good has a place of honor yet higher."

IV.

Let me briefly recapitulate Plato's view. In the beginning were God and Chaos. And God strove to impress the spirit of order, which is his own divine spirit, upon the face of the Void. And in his own image he created a soul of the World, and the name of this soul is Cosmos, Order. And to this divine soul he united a body, hewn from Chaos, and this soul in this body forms the visible Heaven and all that is therein. And he created inhabitants for the world which he had made, the race of gods and of demigods and the race of mortal men; and these were to be his allies and his help-mates in the redemption of Chaos. For Chaos is ruled by blind Necessity, and the horror of its blindness enters into all being in which it has a share; so that not men nor demigods nor gods are free from the peril of Darkness, which is the peril of their material and temporal being. Wherefore it behooves them, men and gods, to strive nobly after the Good, holding fast to the image of divinity which is in them. And to this strife there is and there can be no end. For Chaos is coequal with God, infinite in change as God is infinite in might; and the conflict of the two is the eternal struggle for the world's salvation which is the world's life.

In conclusion, I would say a word in regard to the wonderful vitality of Plato's thought; for to no other philosopher has it been given to lay such lasting hold at once upon men's reason and upon their affectionate imagination. I think the clue to this will appear if we compare his atti-

tude with that of his great pupil and competitor toward the man from whom both derive their inspiration. For Aristotle, the arch-intellectualist, saw in Socrates but the inventor of definition—"two things may be fairly ascribed to Socrates, inductive arguments and universal definition"—and he made definition the very core of his own metaphysics. But for Plato Socrates is first and last that "mid-wife of souls" which he would have himself to be. Plato, in other words, had caught what Aristotle missed, the central spirituality of Socrates's teaching.

Plato is a great dialectician and a master of the things of the intellect, but he knew, as Socrates had taught, that reason alone cannot bring us to the truth, and that science is no capable vessel of reality. When "all philosophers proclaim, as with one voice, that mind is the king of heaven and earth—in reality they are but magnifying themselves," he says; for he knows well that beyond the symbols of sense, which are the symbols of our reason, there is a more splendid reality. We can see this other-world truth but as in a glass darkly; we can speak of it only in myth and allegory; we can hope for its realization never save in those aeon-parted moments of the cosmic cycles when the soul, after its hour of agony, has brought its steeds to that outer revolving heaven whence the things that are beyond stand revealed. And "of that heaven which is above the heavens, what earthly poet ever did or ever will sing worthily? . . . There abides the very being with which true knowledge is concerned; the colorless, formless, intangible essence, visible only to mind, who is the pilot of the soul. The divine intelligence, being nurtured upon mind and pure knowledge, and the intelligence of every soul which is capable of receiving the food proper to it, rejoices at beholding reality, and once more gazing upon truth, is replenished and made glad, until the revolution of the worlds brings her round again to the same place."

Such is the beatific vision, and "how can he who has magnificence of mind and is the spectator of all time and all existence think much of human life?" Surely he will value it only for this spiritual prospect which it promises; "he will look at the city which is within him" whereof the pattern is the heavenly city; and "he will live after the manner of that city, having nothing to do with any other."

Is it not because of this faith in the spiritual reality of the world-life, which is a faith in the spiritual power of mankind, that Plato has brought conviction to the minds of his fellows, generation after generation, the edifice of his thought standing secure amid the rise and decay of competing systems? And is there other measure of truth than this?

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